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HELPFUL HINTS
FOR HARD TIMES.

BEES IN A BAR-FRAME HIVE

BY THE
REV. E. BARTRUM, D.D.
AND THE
REV. R. McCLELLAND

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S.P.C.K.

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BEES IN A BAR-FRAME HIVE.

BY THE

REV. E. BARTRUM, D.D.

(LATE EXAMINER B. BEE K.A.),

RECTOR OF WAKES COLNE, ESSEX,

AND THE

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1897

BEES IN A BAR-FRAME HIVE.

Successful Bee-keeping requires (*a*) thorough knowledge and manual skill; (*b*) a fairly good locality; (*c*) physical capacity to bear stings without much suffering.

(*a*) is acquired by personal experience, but the aid of others at first is essential. Subscribe to the county or local association, so as to obtain the expert's aid; take the *Bee Journal* (1*d.* weekly) * or *Bee Record* (2*d.* monthly).*

(*b*) This is one in which there are fruit or lime trees in abundance, or fields of white clover, sainfoin, raspberry, or mustard. White clover, sainfoin, the raspberry, and lime trees afford the best harvests of honey. Heather gives valuable honey where it abounds.

(*c*) The remedies employed are endless. Remove the sting *at once* with the finger-nail or with the back of a penknife, and *at once* apply the coldest water you can get, until relieved. A small key-barrel pressed over the wound may bring out the poison. A drop of liquid ammonia, or damped carbonate of soda, is suggested by the B.B.K.A. †

* 17, King William Street, Strand, London.
† *i.e.* British Beekeepers' Association.

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A colony is composed of a Queen (a fully developed female), Workers (undeveloped females), and Drones (males). The "lazy drone" gathers no honey, but mates with the queen a few days after her birth. When a queen dies and cannot be replaced by the bees, a "fertile worker" sometimes lays eggs. These are often laid in patches, two or three in one cell, and produce drones only. Break up a hive of this kind, and distribute the combs among other hives having good queens.

Begin in a small way; don't believe in large profits. The bees so fertilize the blossom of fruit and field, that every kitchen garden and every farm should have its hives. Here is one main source of profit.

Buy a veil, and use it on a hat with a wide rim. Coarse black net is cheap. Make a piece about 30 inches by 26 into a bottomless bag with a hem at the top; add elastic about 16 inches long to go round the hat. Tuck the lower part well in. Some rich folks like a black silk veil. Thick woollen gloves *wetted* protect the hands, but are a serious hindrance. A tightened string round the covered wrist and ankles will keep out "creepers;" gauntlets for the arms, going over the sleeves, with elastic at each end, can be made or bought.

Buy a "Bingham smoker," as bees are usually subdued by smoke; use coarse brown paper rolled together, with the lighted end put in first; this will keep well alight if the smoker (when not wanted) is placed in an upright position. Many people prefer carbolic acid diluted. It is a disinfectant, and also quiets the bees. The solution of the B.B.K.A. is 1 oz. of Calvert's No. 5 carbolic

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acid, 2 oz. of water in an 8-oz. medicine bottle.* Shake well before using. Don't allow the acid to touch the skin. Damp a calico cloth large enough to cover the frames; moisten a goose-quill or small brush with the same mixture, and pass the quill over the alighting-board at the entrance. Remove the hive top, draw off the quilt as gently as you can, and draw on the cloth. The bees detest the scent, and will go down below. Be careful not to spill the carbolic mixture on the combs: honey readily takes up any odour, and is soon tainted.

Buy a bar-frame hive with ten frames of the standard size adopted by the B.B.K.A. Have this size only in all your hives; experience has proved it well-nigh perfect. At the last Royal Agricultural Society's show (1895) Messrs. Meadows (Syston, near Leicester) and Redshaw (South Wigston, Leicester) won prizes for cottagers' hives, 8*s.* 6*d.* each. A complete hive should have a floor-board, a body box, with ten frames, two division boards, a rack or upper box for sections or shallow frames, an inverting "lift," and a roof. The frames should have the metal W.B.C. ends. Good hives are made by Messrs. Abbott (Southall), Baldwin (Bromley), Blow (Welwyn), Dines and Son (Maldon, Essex), Greenhill (80, Graham Road, Wimbledon), Howard (Holme, near Peterboro'), Lee & Son (5, Holborn Place, W.C.), Meadows (Syston, near Leicester), Neighbour (127, High Holborn), Overton (Crawley, Sussex), Redshaw (South Wigston, Leicester), and

* Mr. Cowan says, 1½ oz. Calvert's No. 5 carbolic acid, 1½ oz. of glycerine, well mixed in 1 quart of warm water.

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many others. In Scotland, Paterson (Pollokshields), Steele (Gauldry), McNally (Glenluce), Raitt (Blairgowrie). A faultless hive should not cost above 16*s.* or 17*s.* complete. Paint it a light colour, but avoid a large outlay at first.

Buy a swarm in May or June; the earlier the better, if it is a good one, *i.e.* weighing about 4 lbs. The cost is usually 10*s.* to 15*s.* from a neighbour; from a dealer, 3*s.* 6*d.* a pound plus box and carriage. Strong stocks are a certain success, weak an almost certain failure, so have a good swarm.

A feeder will be needed. The latter may be a wide-mouthed bottle. Fill with syrup, as per recipe at the end; tie coarse calico or muslin over mouth; invert and place the mouth over the centre of the hive. Wrap the feeder round with carpet or flannel. The bees will draw the syrup through the muslin or calico on the top. Feeders of all kinds can be bought.

Buy "thick" comb foundation for the frames, 2*s.* to 2*s.* 6*d.* per pound. This is wax impressed with the outline of the bottom of the cells; these the bees elongate, saving much time and trouble. **Thin** foundation for sections (2*s.* 6*d.* to 3*s.* per pound) in the supers over the body box. Cut the sheets of thick 13¼ inches long, 7¾ wide; insert ½ inch in sawcut at the top of each bar frame. Wired foundation does not bend or get out of place, and is therefore better, but it is dear. Frames wired, with the wire embedded in the thick foundation, are good. For filling sections with thin foundation, buy Howard's die and fixing block, price 3*s.* 6*d.*

Place the hives on level ground facing the

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south-east, east, or south, not less than 3 feet apart, with a path at the back; protect if possible on the north and west. Never stand in front of a hive. Give room at the back, and keep the ground clean and clear of weeds.

For swarms, a flat-topped skep is necessary, 16 × 9 outside (price 1*s.* 6*d.*).

On receipt of a swarm, place a level board in front of the hive, raise the hive about 2 inches by level stones or wooden wedges, cover the board with a sheet or cloth reaching to the entrance, remove the top, the quilts, and, unless the swarm is very large, two of the ten frames, closing the others up with the division boards at each end. Take the box or skep with the bees, turn it over, and with a sudden jerk throw the bees on the cloth in front of the hive, striking the top of the box or skep. The bees will soon run in. Aid may be given by a feather or spoon. Hive in the early morning or evening. Put a sheet of stout calico or ticking or of American enamel cloth (the enamel downwards) on the frames. The bees do not easily propolize* this cloth. Do not cover completely at first; a new swarm needs extra room and air. Put quilts of flannel or old carpet on the first cover. Cut holes in the centre of these for the feeder. Feed a new swarm with warm syrup in the evening. Avoid feeding with syrup by day. The bees will at once begin to enlarge the cells, and the queen to lay as soon as some are complete. Next day examine the hives, and see that the combs are straight. If the bees are very crowded, add two

* Propolis is a sticky substance gathered by the bees chiefly from pine and chestnut trees, which is used to stop any crevice, and make everything tight and secure.

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frames, a super also, should the swarm be a very large one. Always give the bees a little space (or work) in front of their needs. Give old combs alternately with new, if the former can be had.

In handling bees, the absence of fear, and quiet treatment are essential. Never strike at a bee. Never move a comb hastily, nor hold a new comb horizontally; if you do, it will probably break and fall. For nervous persons, Grimshaw's* "apifuge" is said to be a safeguard for the hands. Blow a little smoke into the entrance; after a minute (while the bees are gorging themselves with honey, and so lessening their inclination to sting), take off the top and blow a little into the hive at each end. Lift the quilt gently, opening part only of the hive. The carbolic cloth is very useful on the top, besides a little smoke below. Never open a hive in cold or rainy weather. Keep the interior warm by quilts and adjustment of the slides. Don't breathe on the bees, or brush the combs upwards. If stung when manipulating, put a little honey on the injured part after applying the water or other cures. The scent of the poison irritates, that of the honey soothes, the bees.

Expect swarms when the stocks are very strong, and the weather fine. To prevent swarming in very hot weather, shade the entrance, and lift the body box from the floor-board by stones or blocks of wood, but keep the body box level. Yet bees will swarm. An early and large swarm may probably swarm again. Have a hive ready with frames as before. Keep a syringe near the hive, and sprinkle the bees lightly with water when

* 1*s.* 2*d.* a bottle (post free) from Grimshaw, Beeston Hill, Leeds.

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they issue, or if you find them on a bush or tree; they cannot then fly away. Take a large skep with the bunghole stopped, and a calico sheet; shake or brush the bees on to the sheet; put the skep gently over the bees, raise one side of it. If the queen is in the skep, all the bees will run in; then place the bees in the second hive as before. Boughs must sometimes be cut away with a swarm on it, or bees brushed off a bush or trunk. In half an hour, when the bees have clustered inside the skep, remove them to their permanent place; transfer to hive as before. If you wait until evening, carefully shade the skep from the sun.

Swarms at times are very troublesome; they usually issue between 10 and 3. The queen in after swarms or "casts" the day before often utters a shrill piping sound. The old queen heads the first swarm; "casts" often follow on the ninth day, and others at brief intervals. Casts are sometimes useful, but the beginner, after the first swarm (if he seeks honey), should cut out all queen cells,* except the most perfect one. The prevention of swarming puzzles the wisest. Give room and work well in advance; add supers (a second and a third), putting new supers below those already on, and sections over shallow frames. Shade if possible. Raise the hive evenly from the floor-board all round, and admit air but not rain at the top; remove combs full of honey and extract, or put combs full of brood (after the bees have been jerked or brushed off) into

*** A queen cell is somewhat like an acorn, much larger than ordinary worker or drone cells, about an inch in depth, one-third of an inch in diameter, hanging with its mouth downwards.**

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other hives; substitute two or three frames filled with "starters" * or foundation. If bees leave hives and supers, take out all combs with brood, fill places with frames (as above), and return the swarm.

Supers are usually "racks" of sections or of shallow frames; the wooden sections come chiefly from North America, and cost about 2*s.* per hundred. These are made in one piece, but if wetted are easily folded and filled with thin foundation with the aid of Howard's Die.

The sections have four and two "bee-ways" cut in them; two ways suffice. Tin separators are needed: 1-lb. sections are best. Have all racks of one size, so as to fit one above another. Cover the top racks with quilts (as before) and make thoroughly warm. Bees need a temperature of 60° at least to make honey. Put supers on only in fine weather, when the hive below is full of bees, and new white comb appears just at the top of the combs in the body box. If the hive is not full, and the time is favourable for honey, remove one frame at each end, put division boards to contract the hive, and add a super. Young bees hatching out will soon increase the crowd. Place a fresh frame filled with foundation among the combs, and in five or six days (according to weather) another. A little honey scattered in the super will often draw the bees up. When the first rack is nearly full, add another below; when the first is complete, remove it, using the smoker, carbolic cloth, or both, and put another rack under the first. Put a super-

* The term applied to a small piece of comb at the top of a frame or section, which the bees complete. A frame filled with foundation is completed much sooner, but is more costly.

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clearer at night below the rack to be removed; and remove rack clear of bees next morning.

Racks of shallow frames produce larger results than sections. Don't put the shallow frames too near to each other (three-quarters of an inch apart). Extract the honey when all the *cells are sealed;* put in fresh frames filled with foundation, but return the old combs late in the day when the honey is extracted, and withdraw the fresh frames. The smell of honey makes even the best bees reckless thieves, therefore don't tempt them to rob. Some insist on excluder-zinc to prevent the queen from laying in the shallow frames. With section racks it is scarcely necessary. The workers only can pass through this, not the queen. The proper size of queen excluder can be obtained from any good dealer.

Buy Meadows' patent "Raynor Extractor" (20*s.*) as soon as you have any quantity of honey to extract. Take some of the shallow frames in which all the cells are sealed; have a carving-knife as sharp as possible, a narrow jug full of hot water, and plunge the knife in the hot water; pare off the cappings with the knife (carefully keeping these), put two frames in the machine, and turn quickly enough to throw out the honey, but not to break the comb; then reverse the frames, and the honey will flow from the other side. It is sometimes advisable to extract from the frames of the body hives, but not if there is brood in them.

Extract at a distance (if possible) from the hives, in a room into which the bees cannot penetrate; return extracted comb at night. A Bingham knife is good, price 1*s.* 9*d.* Honey must not be bottled at once; it needs time to clear.

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Drain from extractor into a can of the size according to need; pass the honey through a flannel bag (some people prefer a cream cloth) on the valve of the extractor, or spread out on the top of the can.

If kept in a temperature over 80° Fahrenheit, it will soon be fit for bottling, but the thin honey floating on the top should be given to the bees, and not bottled. Cleanse extractors and cans thoroughly with boiling water before use and when done with. 1-lb. bottles for holding extracted honey cost from 10*s.* 6*d.* a gross. Screw tops are useful, but more expensive.

Feeding is often essential to success. If we take away surplus honey, we must feed when there is no honey. In January, February, and March place one or two pounds cakes of soft candy under the quilt of any hive short of food; these can be purchased very cheaply. In spring (from the end or middle of March), stimulate breeding by giving thin syrup (see recipe at end). The queen, finding food coming in, will lay, and the stock become strong before the clover or lime harvest. Put the bottle on the hive in the evening, and give the food warm. Should a spell of cold weather occur when the bees are increasing rapidly, feed liberally. In a cold, bad year, when the hives are full of bees and there is little food, liberal feeding may be needed to keep the bees alive. In autumn (early in September), feed gently to induce the queen to lay; before the frost sets in, give (by rapid feeders) food enough to carry the bees through the winter (see recipe at end), if their own supplies are at all short.

Robbing is a favourite and dangerous pastime

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of the bee if food is scarce. Honey or syrup spilt about or easy of access, soon rouses the robbing instinct. Avoid anything of the kind; carefully cover all feeders. When the honey harvest is over, narrow the entrances; on any sign of robbing, lean a strip of glass 6 inches by 4 against the entrance, allowing the bees to pass out at either end. Place a piece of rag moistened with carbolic solution against the glass, and, if the attack continues, spray the solution on the alighting-board.

Foul brood is the **worst disease** to which bees are subject. It is very contagious, yet is not likely to appear in any healthy hive in which **naphthaline** has been placed.* Cut two balls in half and place on the floor-board near the corners. Beware of giving more! If some of the cells are sunk, look dark, are apparently broken, and contain putrid coffee-coloured matter, there is foul brood. Send a postcard to the Agricultural Department, Whitehall, London, asking for their leaflet on "Foul Brood," and proceed accordingly, or consult the local expert, or larger works. In weak hives, if there is much disease, destroy bees (by sulphur), the combs, frames, and quilt (by fire). Scrape and clean the inside of the hive, scrubbing it afterwards with boiling water and soap. When the hive is partly dry, wash with carbolic acid solution (1 oz. acid to the pint warm water), and then expose to the open air. Medicate all syrup (if there is fear of foul brood) with naphthol Beta.† Keep foul brood away with naphthaline

* A box of this with directions can be had at the office of the *Bee Journal*, price 1*s*.

† Supplied at the office of the *Bee Journal*.

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and naphthol Beta; dysentery (made known by stains on the combs and floor-board), by clean, dry hives and good food. Damp is a deadly enemy to bees; keep your hives always rainproof and dry. Damp quilts and coverings should be exchanged for others free from damp.

Winter strong stocks only; unite weak stocks in September, putting two or three together. See that the bees cover five or six frames at least. But there must be empty cells to cluster upon, and there must be a good supply (20 to 30 lbs.) of sealed food. Add small pieces of naphthaline at the bottom. Put division boards each side of frames; fill empty spaces (if any) on either side with bags of chaff, drugget, paper, or long dry straw. Place the frames $1\frac{3}{4}$ inch apart from centre to centre. Above the frames and under the calico cover (or American cloth) put two pieces of wood $\frac{5}{8}$ of an inch square, $\frac{5}{8}$ of an inch apart, that the bees may pass over. On the calico or other cover place several quilts of flannel or carpet. Some recommend a chaff cushion. A wooden case with canvas bottom fitting the hive, and filled with chaff, or cut straw, or cork dust, keeps the hive warm and dry. Add a piece of naphthaline among the quilts to keep away insects. See that the top and the hive are weatherproof. The entrances may be open 4 to 6 inches wide. If the bees are at all short of food, put flour candy over the cluster under the quilts in January, February, and March. Candy medicated with naphthol Beta (p. 13) can easily be bought.

In **uniting**, bring hives very gradually together; open the hives; sprinkle all the bees with thin syrup scented with a little peppermint; give a little

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smoke; insert combs with brood alternately in the centre; fill up the ends with combs containing honey, and close the top. Some use naphthaline in both hives, or dredge both lots with flour to make the scent uniform.

In removing, great care is needed. Don't move hives above 2 or 3 feet a day, unless their new home is more than 2 miles distant. The hives with new combs should not be sent by rail, unless the combs are wired. Secure frames by tight-fitting wedges, and place perforated zinc on top and at the entrances. Remove quilts and cover to prevent suffocation.

Don't waste wax, but keep all cappings and pieces in a covered pan. Place small quantities in a fine sieve over a pan of water—put this into the oven; the heat will melt the wax, which will pass through the sieve, leaving impurities behind. For large quantities, buy Gerster's wax-extractor (useful also for holding cappings from the combs), price 10*s.* 6*d.*

Keep away (1) **Ants** by paraffin or turpentine rubbed round the legs of the hive; (2) wasps, by narrowing the entrances in autumn; (3) the wax moth, by strong stocks; (4) earwigs, by small prices of naphthaline among the quilts. The **best books** are "Modern Bee-Keeping," 6*d.* published by the B.B.K.A., 17, King William Street, Strand, and by Longmans & Co.; Cowan's "Guide-Book" (Houston & Sons), 1*s.* 6*d.* (many of the details above are from these books); Cowan's "Honey-Bee" (the physiology of the bee) (Houston & Sons), 1*s.* 6*d.*; Cheshire's "Bee-Keeping," 2 vols. (Upcott & Gill).

The art is always advancing, and the details

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are endless. Beside these books, buy weekly the *B. B. Journal* or *Record* monthly (*v.* p. 3).

The following recipes are from the "Guide-Book."

Spring food.— Lump cane sugar, 10 lbs.; water, 7 pints; vinegar, 1 oz.; salt, 1 oz.; adding naphthol Beta (*v.* p. 13), directions are sent with it) if foul brood is feared. Boil for a few minutes.

Autumn food.—White lump cane sugar, 10 lbs.; water, 5 pints; vinegar, 1 oz.; salt, ½ oz. Boil as before.

Provide water (with a little salt added to each pint) if there is none near. Invert a glass jar filled with water on a plate, and put it near the hives.

Clean the hives in spring (April or May), lifting the body box, scraping the floor-board and sweeping it, adding a little naphthaline; or, better still, put the frames and bees into a clean hive, clean and paint the old one, then use it for another stock.

In winter, cleanse and scald all spare hives and floor-boards, and keep old combs carefully in a hive, or wrapped in paper with a little naphthaline added. If there is a bee-room, fumigate all hives, combs, etc., with burning sulphur to kill disease.

Secret of Success.

Strong stocks, patience, gentleness, sound simple hives, freedom from foul brood, thorough knowledge, gradual progress, a good locality, and a good season.

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